IN THE CLAIMS:

The following claims replace all prior versions and listings of claims in the

application:

1. (Currently Amended)   A system for allocating processing resources to functions

in a queue waiting to be executed, comprising:

a processor having a queue for holding a plurality of executable functions

including:

a capacity determining means for determining an amount of the processing

resources within the processor that are available to be assigned;

a load determining means for determining an estimate of the processing

resources within the processor that are needed to execute each function waiting in the

queue;

an allocating means for allocating the processing resources within the processor

to the functions based on ~~a hierarchical priority~~ an allocation scheme;

~~a measuring means connected to the processor for measuring an actual amount~~

~~of the processing resources used;~~

~~a revising means for revising the estimate of the amount of processing resources~~

~~needed to execute each function waiting in the queue based on the measured amount~~

~~of the processing resources used; and~~

~~a reallocating means for reallocating the available amount of processing~~

~~resources to the functions in accordance with the revised estimate and the hierarchical~~

priority scheme.

2.   (Currently Amended) The system of claim 1, further comprising:

a comparing means for comparing the sum of the measured amount of

processing resources used <u>within the processor</u> to a high and a low threshold value;

an alarming means interconnected with the processor for setting an alarm if the

sum of the measured amount of processing resources used <u>within the processor</u>

exceeds the high threshold value; and removing the alarm if the sum of the measured

amount of processing resources used is less than the low threshold value.

3.   (Currently Amended) The system of claim 2, further comprising:

a throttling means for assigning a resource throttling value to each function

waiting in the queue to be executed when the alarm is set <u>executed</u>, wherein the

throttling value determines the <u>a</u> reduction of the processing resources allocated to

each of the functions.

4.   (Currently Amended) The system of claim [[2]] <u>1</u>, further comprising:

a reducing means for reducing a number of instances for which a particular

<u>controlling each</u> function <u>to prevent execution according to a degradation scheme</u> may

execute concurrently when the alarm is set <u>executed</u>.

5.   (Currently Amended) A system for allocating processing resources to functions

in a queue waiting to be executed, comprising:

        a processor having at least one communication port;

        at least ~~once~~ one communication channel connected to each of said at least one

communication port;

        a capacity determining means for determining an amount of the processing

resources within the processor that are available to be assigned;

        a load determining means for determining an estimate of the processing

resources within the processor that are needed to execute each function waiting in the

queue;

        an allocating means for allocating the processing resources within the processor

to the functions based on a ~~hierarchical priority~~ an allocation scheme;

        ~~a measuring means connected to the processor for measuring an actual amount~~

~~of the processing resources used;~~

        ~~a revising means for revising the estimate of the amount of processing resources~~

~~needed to execute each function waiting in the queue based on the measured amount~~

~~of the processing resources used; and~~

        ~~a reallocating means for reallocating the available amount of processing~~

~~resources to the functions in accordance with the revised estimate and the hierarchical~~

~~priority scheme.~~

6. (Currently Amended) The system of claim 5, further comprising:

a comparing means for comparing the sum of the measured amount of processing resources used <u>within the processor</u> to a high ~~and a low~~ threshold value;

an alarming means interconnected with the processor for setting an alarm if the sum of the measured amount of processing resources used <u>within the processor</u> exceeds the high threshold value; ~~and removing the alarm if the sum of the measured amount of processing resources used is less than the low threshold value~~.

7. (Currently Amended) The system of claim 6, further comprising:

a throttling means for assigning a resource throttling value to each function waiting in the queue to be executed when the alarm is ~~set~~ <u>executed</u>, wherein the throttling value determines ~~the~~ <u>a</u> reduction of the processing resources allocated to each of the functions.

8. (Currently Amended) The system of claim 6, further comprising:

a reducing means for ~~reducing a number of instances for which a particular~~ <u>controlling each</u> function <u>to prevent execution according to a degradation scheme</u> ~~may execute concurrently~~ when the alarm is ~~set~~ <u>executed</u>.

9.   (Currently Amended) A system for allocating processing resources to functions in a queue waiting to be executed, comprising:

      a computer that receives data signals; and

      a processor for said computer that is programmed to:

            determine an amount of ~~the processor resource~~ processing resources within the processor that are available to be assigned to each function;

            determine an estimate of an amount of the ~~resource~~ processing resources within the processor needed for each function waiting in the queue to execute; and

            allocate the available ~~resource~~ processing resources within the processor to the functions based on ~~a hierarchical priority~~ an allocation scheme.

10.   (Currently Amended) The system of claim 9, wherein [[:]] the functions are decomposed elements of ~~a more complex process and do not require the same amount of resource to execute~~ one or more algorithms that allow management of their computational requirements.

11.   (Canceled)

12.   (Currently Amended) The system of claim [[11]] 9, wherein [[:]] the processor assigns each of the functions a separate priority within ~~the~~ a hierarchical priority scheme.

13.   (Currently Amended) The system of claim [[12]] 9, wherein [[:]] the processor

assigns ~~each instance of~~ each function a separate priority within ~~the hierarchical priority~~

a round-robin allocation scheme.

14.   (Currently Amended) The system of claim [[10]] 9, further comprising:

the processor assigns a resource throttling value to each function waiting in the

queue to be executed when the total processing capacity of the processor allocated to

the functions exceeds a threshold,

wherein the throttling value determines ~~the~~ a reduction of the resource allocated

to each of the functions according to a degradation scheme.

15. - 17.   (Canceled)

18.   (Currently Amended) The system of claim [[17]] 9, further comprising:

the processor is programmed to:

compare the measured amount of ~~the resource~~ the processing resources

within the processor that is used to a high ~~and a low~~ threshold value;

~~set~~ execute an alarm if ~~the~~ a measured amount of ~~the resource~~ the

processing resources within the processor that is used exceeds the high threshold

value; ~~and~~

~~remove the alarm if the measured amount of the resource used is less than the low threshold value~~.

19.   (Canceled)

20.   (Currently Amended) The system of claim 18, further comprising:

the processor ~~reduces the number of instances in which a particular~~ controlling each function to prevent execution according to a degradation scheme ~~may execute concurrently~~ when the alarm is ~~set~~ executed.

21. - 24.   (Canceled)

25.   (New) The system of claim 1, further comprising:

a measuring means connected to the processor for measuring an actual amount of the processing resources used within the processor;

a revising means for ~~revising the estimate~~ determining a revised estimate of the amount of processing resources within the processor needed to execute each function waiting in the queue based on the measured amount of the processing resources used; and

a reallocating means for reallocating the available amount of processing resources within the processor to the functions in accordance with the revised estimate

and the ~~hierarchical priority~~ <u>allocation</u> scheme.

26. (New) The system of claim 1, wherein the allocating means comprises an allocation scheme that re-allocates the processing resources to the functions that have the greatest need, wherein the functions are parts of an algorithm that allows modification of its computational requirements, and

removes the processing resources from, and prevents execution of, certain functions of the algorithm that need less resource allocations to execute the algorithm.

27. (New) The system of claim 5, wherein the allocating means comprises an allocation scheme that re-allocates the processing resources to the functions that have the greatest need, wherein the functions are parts of an algorithm that allows modification of its computational requirements, and

removes the processing resources from, and prevents execution of, certain functions of the algorithm that need less resource allocations to execute the algorithm.

28. (New) The system of claim 5, further comprising:

a measuring means connected to the processor for measuring an actual amount of the processing resources used within the processor;

a revising means for determining a revised estimate of the amount of processing resources within the processor needed to execute each function waiting in the queue

based on the measured amount of the processing resources used; and

a reallocating means for reallocating the available amount of processing

resources within the processor to the functions in accordance with the revised estimate

and the allocation scheme.

29.   (New) The system of claim 5, wherein the load determining means comprises

an estimating means for estimating MIPS (millions of instructions per second)

consumption of each function, and

for updating said consumption MIPS estimation when a state of each function

changes.

30.   (New) The system of claim 5, wherein the allocating means comprises an

assigning means for assigning an allocation of processing resources, within the

processor,

for determining a total MIPS available in within the processor available for

processing, and

for assigning an allocation of MIPS for execution of each of each function

according to the allocation scheme.

31.   (New) The system of claim 5, wherein the determining means determines the

processing resources withing the processor for functions of one or more adaptive

algorithms, wherein the one or more adaptive algorithms allow modification of their

computational requirements.

32.   (New) The system of claim 9, wherein the processor that is programmed to

allocate the available processing resources is further programmed to determine a total

MIPS (millions of instructions per second) available within the processor for processing,

and

    assign and allocation of MIPS for execution of each function according to the

allocation scheme.

33.   (New) The system of claim 9, wherein the processor that is programmed to

determine an estimate of an amount of processing resources determines the

processing resources available within the processor needed for functions from one or

more adaptive algorithms,

    wherein the one or more adaptive algorithms allow modification of their

computational requirements.